IN THE CLAIMS

Please amend the claims as follows:

Claims 1-2 (Canceled).

Claim 3 (Previously Presented): An injection molding apparatus as defined in claim 25, wherein the screw extruder has an injection function of moving the extrusion screw in the axial direction to inject the molten metal or the semi-solidified slurry.

Claim 4 (Previously Presented): An injection molding apparatus as defined in claim 3, wherein a rounded portion is formed to a joined portion between the first channel and the second channel for smoothly turning the direction of the molten metal or the semi-solidified slurry.

Claim 5 (Canceled).

Claim 6 (Previously Presented): An injection molding apparatus as defined in claim 25, wherein a check valve is disposed in the first channel for preventing the semi-solidified slurry in the second channel from flowing backward to the screw extruder.

Claim 7 (Previously Presented): An injection molding apparatus as defined in claim 25, wherein the extrusion screw comprises a central shaft rotatably inserted in the chamber and a plurality of screw segments fitted over the outer circumference of the central shaft and arranged in the axial direction.

Claim 8 (Original): An injection molding apparatus as defined in claim 7, wherein each of the plurality of screw segments has a compression ratio of 1.0 and is formed into an identical axial length.

Claim 9 (Original): An injection molding apparatus as defined in claim 7, wherein the central shaft is made of a metal material of high temperature creep strength and the plurality of the screw segments are made of material excellent in resistance to melting damage to the molten metal or the semi-solidified slurry.

Claim 10 (Previously Presented): An injection molding apparatus as defined in claim 25, further comprising:

a static mixer disposed in the nozzle for mixing the semi-solidified slurry passing through the nozzle.

Claim 11 (Original): An injection molding apparatus as defined in claim 10, wherein the static mixer comprises a stirring blade formed in a shape twisted around the axial center of the nozzle.

Claim 12 (Original): An injection molding apparatus as defined in claim 11, wherein the stirring blade comprises a plurality of stirring blades of different twisting directions and these blades are arranged in the axial direction in the nozzle such that these blades are in perpendicular to each other.

Claim 13 (Original): An injection molding apparatus as defined in claim 10, further comprising:

a heating member disposed at the periphery of the nozzle for setting temperature of the light metal alloy in a portion corresponding to the static mixer to a temperature higher than the liquidus temperature.

Claim 14 (Original): An injection molding apparatus as defined in claim 10, further comprising:

a heating member disposed upstream to the static mixer, for setting temperature of the light metal alloy in a portion upstream to the static mixer to a temperature between the solid state and the liquid state.

Claim 15 (Previously Presented): An injection molding apparatus as defined in claim 25, wherein said nozzle discharge port opening/closing means is a temperature setting member disposed in the discharge port of the nozzle for forming a solid plug.

Claim 16 (Previously Presented): An injection molding apparatus as defined in claim 25, wherein said nozzle discharge port opening/closing means is an on/off valve disposed in the discharge port of the nozzle.

Claim 17 (Previously Presented): An injection molding apparatus as defined in claim 25, wherein a slitwise channel is disposed in the nozzle for causing a shearing flow to the semi-solidified slurry passing through the nozzle.

Claim 18 (Previously Presented): An injection molding apparatus as defined in claim 25, further comprising:

a melting furnace for heating the solid material into a molten metal the melting furnace being located substantially at the identical ground level with that of the clamping device; and

a molten metal supply unit for supplying the molten metal in the melting furnace by way of a supply pipeline shielded with an inert gas to the hopper.

Claim 19 (Cancelled).

Claim 20 (Original): An injection molding apparatus as defined in claim 18, wherein the melting furnace comprises an induction heating type heating device for instantaneously melting the solid material into a molten metal.

Claim 21 (Previously Presented): An injection molding apparatus as defined in claim 25, wherein the chamber comprises a heating unit for heating the material at the inside.

Claim 22 (Previously Presented): A method of injection molding a light metal alloy comprising the following steps of:

cooling a molten metal under shearing by an extrusion screw and thereby forming the same into a semi-solidified slurry in a chamber of a light metal alloy injection molding apparatus as defined in claim 25;

discharging the semi-solidified slurry from a discharge port at the lower end of the chamber;

turning the direction of the semi-solidified slurry once into a horizontal direction; and then

injecting the semi-solidified slurry into molding plates opening/closing in a horizontal direction.

Claim 23 (Previously Presented): A method of injection molding a light metal alloy comprising the following steps of:

melting a light metal material into a molten material by a melting furnace located at a ground level;

supplying the molten metal to a hopper in a chamber of an injection molding apparatus as defined in claim 25 located substantially vertically at the ground level;

cooling the molten metal under shearing by an extrusion screw and forming the same into a semi-solidified slurry in the chamber; and

turning the direction of the semi-solidified slurry from a discharge port at the lower end of the chamber into a horizontal direction and then injecting the same into molding plates opening/closing in the horizontal direction located at the ground level.

Claim 24 (Currently Amended): A method of injection molding a light metal alloy comprising the steps of:

supplying a molten metal to a hopper while controlling the height of the molten metal in the hopper so that the surface height of the molten metal is lower than a shaft seal of an extrusion screw;

supplying the molten metal to a substantially vertical chamber;

cooling the molten metal under shearing by the extrusion screw into a semi-solidified slurry in the substantially vertical chamber;

discharging the semi-solidified slurry from a discharge port at the lower end of the chamber;

turning the semi-solidified slurry in the horizontal direction;

filling an internal channel of the horizontal direction with the semi-solidified slurry; and

injecting the turned semi-solidified slurry of a predetermined amount into molding plates opening or closing ~~dosing~~ in the horizontal direction from the discharge end of the second internal channel of the horizontal direction.

Claim 25 (Previously Presented): An injection molding apparatus for a light metal alloy, comprising:

a chamber;

a extrusion screw located substantially vertically and provided rotationally inside said chamber, wherein the extrusion screw is mounted for movement in the axial direction thereof, to extrude the molten metal or the semi-solidified slurry;

a connection member having a first internal channel substantially in a vertical direction and a second internal channel extending horizontally from the lower end of the first channel, said connection member being connected to a discharge port of said chamber;

a nozzle connected at the discharge end of said connection member;

nozzle discharge port opening/closing means for opening or closing a discharge port of said nozzle; and

a clamping device for injection molding the molten metal or the semi-solidified slurry discharged from said nozzle, wherein said clamping device is adapted to open or close a movable plate relative to a stationary plate in a horizontal direction.

Claim 26 (Previously Presented): A method of injection molding a light metal alloy as defined in claim 24, wherein the turned semi-solidified slurry is injected into the molding plates by moving the extrusion screw in the axial direction thereof.

Claim 27 (Previously Presented): A method of injection molding a light metal alloy as defined in claim 24, wherein the turned semi-solidified slurry is injected into the molding plates by moving an injection plunger in the horizontal direction.

Claim 28 (Previously Presented): An injection molding apparatus for a light metal alloy, comprising:

a chamber;

an extrusion screw located substantially vertically and provided rotationally inside said chamber;

a connection member having a first internal channel substantially in a vertical direction and a second internal channel extending horizontally from the lower end of the first channel, said connection member being connected to a discharge port of said chamber;

an injection plunger provided in the second internal channel, said injection plunger moving in the horizontal direction for injecting the molten metal or semi-solidified slurry;

a nozzle connected at the discharge end of said connection member;

nozzle discharge port opening/closing means for opening or closing a discharge port of said nozzle; and

a clamping device for injection molding the molten metal or the semi-solidified slurry discharged from said nozzle, wherein said clamping device is adapted to open or close a movable plate relative to a stationary plate in a horizontal direction.

Claim 29 (Previously Presented): An injection molding apparatus as defined in claim 28, wherein said nozzle discharge port opening/closing means is a temperature setting member disposed in the discharge port of the nozzle for forming a solid plug.

Claim 30 (Previously Presented): An injection molding apparatus as defined in claim 28, wherein said nozzle discharge port opening/closing means is an on-off valve disposed in the discharge port of the nozzle.

Claim 31 (Previously Presented): An injection molding apparatus for a light metal alloy as defined in Claim 25, further comprising:

a cooling unit for cooling a light metal material supplied in said chamber so as to be formed into a molten metal or semi-solidified slurry.

Claim 32 (Currently Amended): [[An]] The injection molding apparatus according to Claim 25, further ~~for a light metal alloy,~~ comprising:

~~a chamber;~~

a hopper connected to the upper end of the chamber;

a level sensor for detecting the surface height of a molten metal in said hopper; and

~~an extrusion screw located substantially vertically and provided rotationally inside said chamber, wherein said extrusion screw is mounted for movement in the axial direction thereof, to extrude the molten metal or the semi-solidified slurry;~~

a control device for controlling the supply of the molten metal to said hopper based on a signal from said level sensor so that the surface height of the molten metal is lower than a shaft seal of the extrusion screw~~;~~

~~a connection member having a first internal channel substantially in a vertical direction and a second internal channel extending horizontally from the lower end of the first channel, said connection member being connected to a discharge port of said chamber;~~

~~a nozzle connected at the discharge end of said connection member; and~~

~~a clamping device for injection molding the molten metal or the semi-solidified slurry discharged from said nozzle, wherein said clamping device is adapted to open or close a movable plate relative to a stationary plate in a horizontal direction~~.

Claim 33 (Previously Presented): An injection molding apparatus as defined in Claim 32, further comprising a cooling unit for cooling the molten metal supplied in said chamber.

Claim 34 (Currently Amended): [[An]] The injection molding apparatus according to Claim 28, further ~~for a light metal alloy,~~ comprising:

~~a chamber;~~

a hopper connected to the upper end of the chamber;

a level sensor for detecting the surface height of a molten metal in said hopper; and

~~an extrusion screw located substantially vertically and provided rotationally inside said chamber;~~

a control device for controlling the supply of the molten metal to said hopper based on a signal from said level sensor so that the surface height of the molten metal is lower than a shaft seal of the extrusion screw~~;~~

~~a connection member having a first internal channel substantially in a vertical direction and a second internal channel extending horizontally from the lower end of the first channel, said connection member being connected to a discharge port of said chamber;~~

~~an injection plunger provided in the second internal channel, said injection plunger moving in the horizontal direction for injecting the molten metal or semi-solidified slurry;~~

~~a nozzle connected at the discharge end of said connection member; and~~

~~a clamping device for injection molding the molten metal or the semi-solidified slurry discharged from said nozzle, wherein said clamping device is adapted to open or close a movable plate relative to a stationary plate in a horizontal direction~~.

Claim 35 (Previously Presented): An injection molding apparatus as defined in Claim 34, further comprising a cooling unit for cooling the molten metal supplied in said chamber.

Claim 36 (Previously Presented): An injection molding apparatus for a light metal alloy as defined in Claim 28, further comprising a cooling unit for cooling a light metal material supplied in said chamber.